Gillette
Environment
Health and Safety

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MATERIAL SAFETY DATA SHEET

NAME: DURACELL LITHIUM MANGANESE DIOXIDE BATTERIES

CAS NO: Not applicable **Effective Date:** 9/23/03 **Rev:** 8

A. — IDENTIFICATION

	%	
Manganese Dioxide (1313-13-9)	30-45	Formula: Mixture — Mixture
1,2-Dimethoxyethane (110-71-4)	5-10	Molecular Weight: NA
Propylene Carbonate (108-32-7)	1-10	Synonyms: Lithium Manganese Dioxide Cells: DL2/3A; DL123A(3V); DL223A(6V); DL245 (6V); DL323A (9V); DLCR2; PL123 ; CR-V3P (3V); batteries comprised of DL2/3A cells, and DLP533570.
Lithium (7439-93-2)	1-5	
Carbon Black (1333-86-4)	1-5	
Lithium Trifluoromethane Sulfonate (33454-82-9)	1-5	
Ethylene Carbonate (96-49-1)	0-5	

B. — PHYSICAL DATA

Boiling Point: NA °F NA °C	Melting Point: NA °F NA °C	Freezing Point: NA °F NA °C
Specific Gravity (H_2O=1): NA	Vapor Density (air=1): NA	Vapor Pressure @ ____ °F: NA mm Hg
Evaporation (Ether =1): NA	Saturation in Air (by volume@ ____ °F): NA	Autoignition Temperature: ____ °F ____ °C: NA
% Volatiles: NA	Solubility in Water: NA	pH: NA

Appearance/Color: Small cylindrical batteries. Contents dark in color.

Flash Point and Test Method(s): 1,2-Dimethoxyethane 42.8 °F, 6°C (Closed Cup)

Flammable Limits in Air (% by volume): Lower NA % Upper NA %

C. — REACTIVITY

Stability		Polymerization		
[X] stable	[ ] unstable	[ ] may occur	[X] will not occur	

Conditions to Avoid: Do not heat, crush, disassemble, short circuit or recharge.

Conditions to Avoid: Not applicable

Incompatible Materials: Contents incompatible with strong oxidizing agents.

Hazardous Decomposition Products: Thermal degradation may produce hazardous fumes of manganese and lithium; hydrofluoric acid; oxides of carbon and sulfur and other toxic by-products.

*** IF MULTIPLE INGREDIENTS, INCLUDE CAS NUMBERS FOR EACH** **NA=NOT AVAILABLE**

Footnotes

Not applicable

D. — HEALTH HAZARD DATA

Occupational Exposure Limits PEL's, TLV's, etc.)

8-Hour TWAs: Manganese Dioxide (as Mn) - 5 mg/m^3 (Ceiling) (OSHA); 0.2 mg/m^3 (ACGIH/Gillette)

1,2-Dimethoxyethane - 0.15 ppm (Gillette)

Carbon Black - 3.5 mg/m^3 (OSHA/ACGIH)

Lithium Trifluoromethane Sulfonate - 0.1 mg/m^3 (3M recommendation)

These levels are not anticipated under normal consumer use conditions.

Warning Signals

Not applicable

Routes/Effects of Exposure

These chemicals and metals are contained in a sealed can. For consumer use, adequate hazard warnings are included on both the package and on the battery. Potential for exposure should not exist unless the battery leaks, is exposed to high temperature or is mechanically, physically, or electrically abused.

1. Inhalation	Not anticipated. Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries.
2. Ingestion	Irritation to the internal/external mouth area may occur following exposure to a leaking battery.
3. Skin	a. Contact
	Irritation may occur following exposure to a leaking battery.
	b. Absorption
	Not anticipated.
4. Eye Contact	Irritation may occur following exposure to a leaking battery.
5. Other	Not applicable

E. — ENVIRONMENTAL IMPACT

1. Applicable Regulations	All ingredients listed in TSCA inventory.
2. DOT Hazard Class -	Not applicable
3. DOT Shipping Name -	Not applicable

While lithium batteries are regulated by IATA and ICAO, the type of lithium batteries offered for sale by DURACELL are considered non-hazardous per provision A45 of the IATA Dangerous Goods Regulations and provision A45 of the ICAO Technical Instructions For The Safe Transport Of Dangerous Goods By Air. Per section A45 of the IATA and ICAO regulations, properly marked, labeled and packaged DURACELL consumer lithium batteries, which are of the solid cathode type, with less than 1g lithium per cell and less than 2g lithium per battery, are exempt from further regulation. When these batteries are separated to prevent short circuits and properly packaged in strong packaging (except when installed in electronic devices), they are acceptable for air transport as airfreight without any other restrictions. In addition, when installed in equipment or when no more than 24 cells or 12 batteries meeting the A45 provision are shipped, they are not subject to special packaging, marking, labeling or shipping documentation requirements. Thus, these batteries are not considered hazardous under the current regulations and are acceptable for air transport.

Environmental Effects

These batteries pass the U. S. EPA's Toxicity Characteristic Leaching Procedure and therefore, may be disposed of with normal waste.

F. — EXPOSURE CONTROL METHODS

Engineering Controls

General ventilation under normal use conditions.

Eye Protection

None under normal use conditions. Wear safety glasses when handling leaking batteries.

Skin Protection

None under normal use conditions. Use butyl gloves when handling leaking batteries.

Respiratory Protection

None under normal use conditions.

Other

Keep batteries away from small children.

G. — WORK PRACTICES

Handling and Storage

Store at room temperature. Avoid mechanical or electrical abuse. **DO NOT** short or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag.

Normal Clean Up

Not applicable

Waste Disposal Methods

No special precautions are required for small quantities. Large quantities of open batteries should be treated as hazardous waste. Dispose of in accordance with federal, state and local regulations. Do not incinerate, since batteries may explode at excessive temperatures.

H. — EMERGENCY PROCEDURES

Steps to be taken if material is released to the environment or spilled in the work area

Notify safety personnel of large spills. Evacuate the area and allow vapors to dissipate. Increase ventilation. Avoid eye or skin contact. **DO NOT** inhale vapors. Clean-up personnel should wear appropriate protective gear. Remove spilled liquid with absorbent and contain for disposal.

Fire and Explosion Hazard	Extinguishing Media
Batteries may burst and release hazardous decomposition products when exposed to a fire situation. See Sec. C.	As for surrounding area. Dry chemical, alcohol foam, water or carbon dioxide. For incipient fires, carbon dioxide extinguishers are more effective than water.

Firefighting Procedures

Cool fire-exposed batteries and adjacent structures with water spray from a distance. Use self-contained breathing apparatus and full protective gear.

I. — FIRST AID AND MEDICAL EMERGENCY PROCEDURES

Eyes

Not anticipated. If battery is leaking and material contacts eyes, flush with copious amounts of clear, tepid water for 30 minutes. Contact a physician at once.

Skin

Not anticipated. If battery is leaking, irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irritation, injury or pain persists, consult a physician.

Inhalation

Not anticipated. If battery is leaking, contents may be irritating to respiratory passages. Remove to fresh air. Contact physician if irritation persists.

Ingestion

Not anticipated. Rinse the mouth and surrounding area with clear, tepid water for at least 15 minutes. Consult a physician immediately for treatment and to rule out involvement of the esophagus and other tissues.

Notes to Physician

1) Potential leakage of dimethoxyethane, propylene carbonate and lithium trifluoromethane sulfonate.
2) Dimethoxyethane rapidly evaporates.
3) Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.